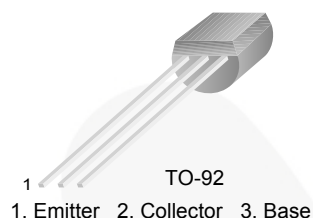


BC63916

NPN Epitaxial Silicon Transistor

Features

- Switching and Amplifier Applications



Ordering Information

Part Number	Top Mark	Package	Packing Method
BC63916_D74Z	BC639-16	TO-92 3L	Ammo
BC63916_D27Z	BC639-16	TO-92 3L	Tape and Reel

Absolute Maximum Ratings⁽¹⁾

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CER}	Collector-Emitter Voltage at $R_{\text{BE}} = 1 \text{ k}\Omega$	100	V
V_{CES}	Collector-Emitter Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_{C}	Collector Current	1	A
$T_{\text{J}}, T_{\text{STG}}$	Operating and Storage Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Note:

1. Pulse test: pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2.0\%$.

Thermal Characteristics⁽²⁾

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Unit
P_D	Power Dissipation	830	mW
	Derate Above $T_A = 25^\circ\text{C}$	6.6	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	150	$^\circ\text{C/W}$

Note:

2. PCB size: FR-4 76 x 114 x 0.6T mm³ (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

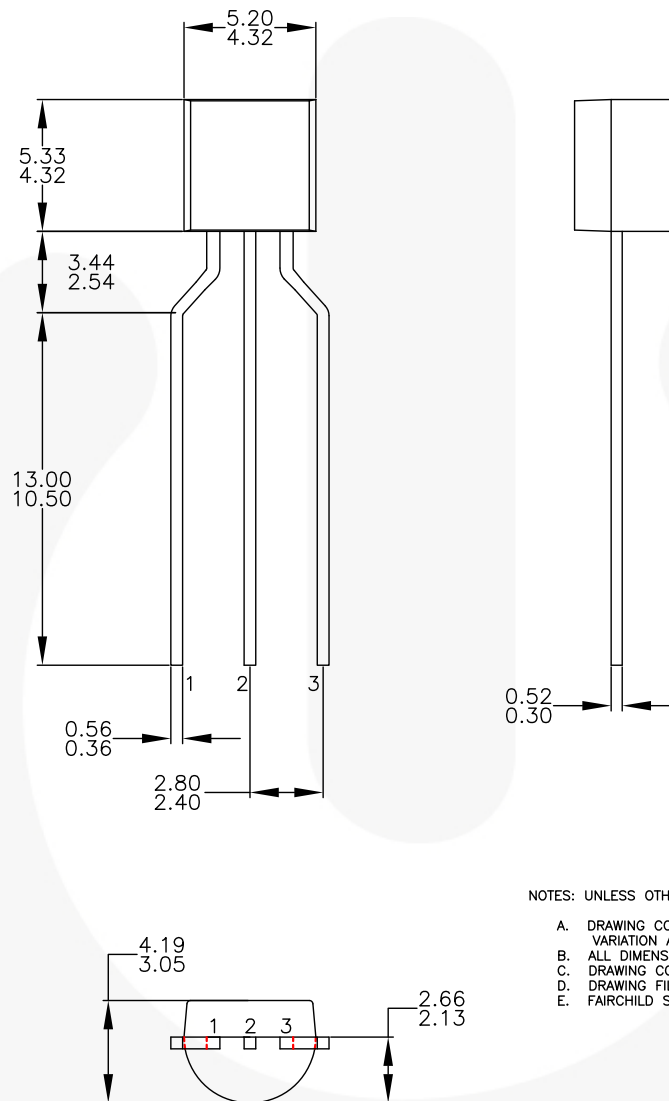
Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{CBO}	Collector-Base Breakdown Voltage	$I_C = 100\ \mu\text{A}$, $I_E = 0$	100			V
BV_{CEO}	Collector-Emitter Breakdown Voltage	$I_C = 10\ \text{mA}$, $I_B = 0$	80			V
BV_{EBO}	Emitter-Base Breakdown Voltage	$I_E = 10\ \mu\text{A}$, $I_C = 0$	5.0			V
I_{CBO}	Collector Cut-Off Current	$V_{CB} = 30\ \text{V}$, $I_E = 0$			100	nA
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 5\ \text{V}$, $I_C = 0$			10	μA
h_{FE1}	DC Current Gain	$V_{CE} = 2\ \text{V}$, $I_C = 5\ \text{mA}$	25			
h_{FE2}		$V_{CE} = 2\ \text{V}$, $I_C = 150\ \text{mA}$	100		250	
h_{FE3}		$V_{CE} = 2\ \text{V}$, $I_C = 500\ \text{mA}$	25			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 500\ \text{mA}$, $I_B = 50\ \text{mA}$			0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$V_{CE} = 2\ \text{V}$, $I_C = 500\ \text{mA}$			1	V
f_T	Current Gain Bandwidth Product	$V_{CE} = 5\ \text{V}$, $I_C = 10\ \text{mA}$, $f = 50\ \text{MHz}$		100		MHz

Physical Dimension

TO-92



NOTES: UNLESS OTHERWISE SPECIFIED

- A. DRAWING CONFORMS TO JEDEC MS-013, VARIATION AC.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DRAWING CONFORMS TO ASME Y14.5M-2009.
- D. DRAWING FILENAME: MKT-ZA03FREV3.
- E. FAIRCHILD SEMICONDUCTOR.

Figure 1. 3-LEAD, TO-92, MOLDED 0.200 IN-LINE SPACING LD FORM (J61Z OPTION) (ACTIVE)

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<http://www.fairchildsemi.com/dwg/ZA03F.pdf>





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Dual Cool™	Making Small Speakers Sound Louder and Better™	SignalWise™	TranSiC™
EcoSPARK®	MegaBuck™	SmartMax™	TriFault Detect™
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Definition of Terms

Datasheet Identification	Product Status	Definition
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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

Rev. I66

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